SKIASCOPY: WITH A DESCRIPTION OF AN APPARATUS FOR ITS READY EMPLOYMENT.

By SWAN M. BURNETT, M.D.,

OPHTHALMIC AND AURAL SURGEON TO PROVIDENCE HOSPITAL; DIRECTOR OF THE EYE AND EAR CLINIC, CENTRAL DISPENSARY; PRESIDENT OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA, WASHINGTON, D. C.

(*With a wood engraving.*)

SKIASCOPY has now a recognized place among the scientific methods of testing the refraction of the eye, and its employment, while perhaps not general, is increasing in extent. The principles on which it is based are now explained (though not in every case fully or accurately) in several recent text-books on the eye, and in most of the manuals on refraction,[1] so that it is not necessary to consider here the theoretical part of the subject.

While deeming it one of our most valuable means of determining refraction, I still do not hold it superior to all others for all sorts of cases. It has its limits as well as its advantages. Thus, I think that the accommodation of the patient comes in to vitiate the result to a much greater extent than in the direct ophthalmoscopic method. But for children and high degrees of ametropia it is the easiest of any of the methods at present in use, and is as scientifically accurate as any. And, as I have elsewhere[2] remarked, we cannot have at our hands too many means of verifying our diagnosis in refraction.

But while there are few who doubt the scientific ac-

[1] See paper, by the author, on "Skiascopy," in *Medical News*, Sept. 15, 1888.
[2] Theoretical and Practical Treatise on Astigmatism. Chambers, St. Louis, 1887.

Reprinted from the ARCHIVES OF OPHTHALMOLOGY, Vol. xix, No. 2, 1890.

Fig.1.

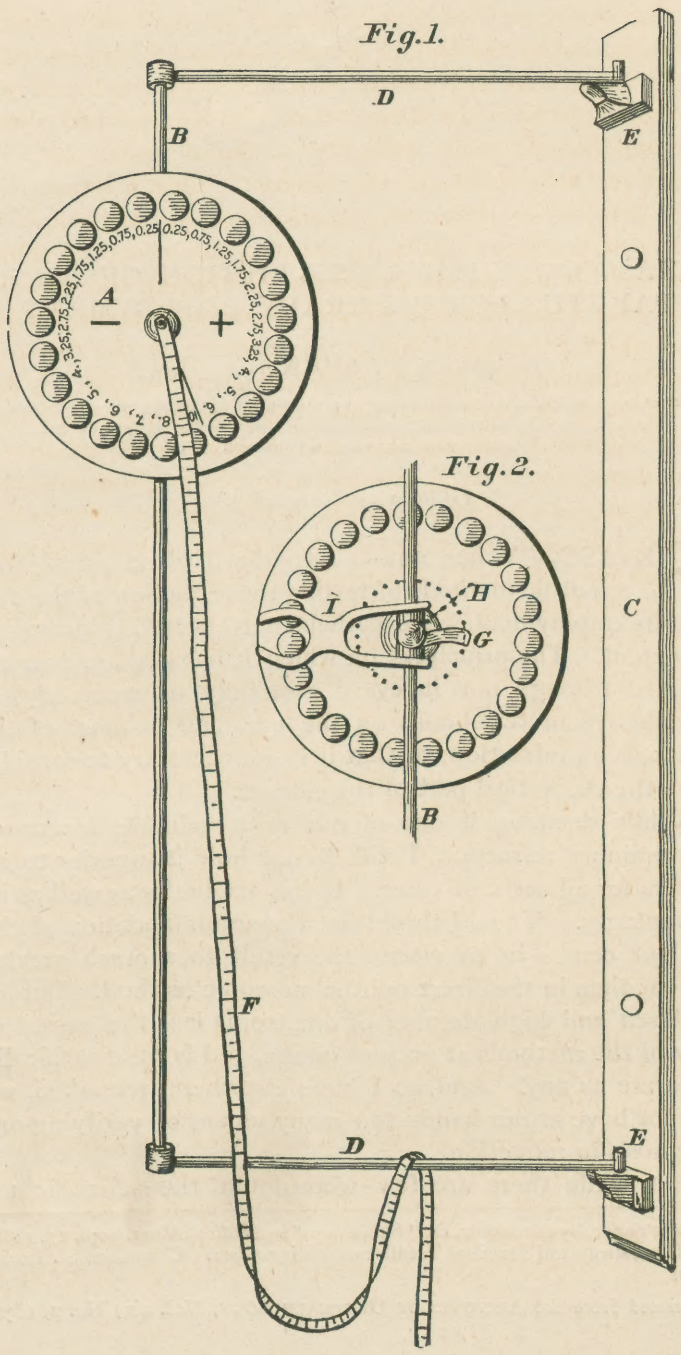
D
B
E
A
—
+
0.25,0.75,1.25,1.75,2.25,2.75,3.25,4.,5.,6.,7.,8.,10
0.25,0.75,1.25,1.75,2.25,2.75,3.25,4.,5.,6.,7.,8.,10
O
C
O
F
D
E

Fig.2.

I
H
G
B

curacy of the method, a large number are no doubt debarred from its use by the lack of an easy method of employing it.

In using it in the manner most generally employed, it is necessary to fit a trial frame before the eye, and place lenses therein in succession until one is found which gives emmetropic movements to the shadow. This, however, is so consumptive of time and patience that the surgeon in the hurry of practice is likely to select some other and shorter method. It was for the purpose of facilitating this examination that I devised the simple apparatus described below, and which I exhibited first at the meeting of the American Ophthalmological Society, at Washington, in 1888. I have been using it since that time in my daily practice to my own complete satisfaction, and I have no hesitation in recommending it to the profession for the purposes intended. It consists of a hard-rubber disk, *A*, Fig. 1 (Fig. 2 being a back view), containing 23 lenses on its periphery—10 convex and 13 concave. This disk is movable on the brass-rod *B*, which is attached at either end to two other bass rods, *D D*, which turn on the pivots *E E* fastened to the wooden board *C*, which is attached to the wall of the ophthalmoscopic room. This enables the disk to be placed, by means of the screw *H*, Fig. 2, at any height, and to be turned and retained in any desired position, and the whole apparatus can be turned back against the wall when not in use.

The patient is placed in a proper position near the ophthalmoscopic lamp, and the disk is brought before the eye to be examined. By turning the disk on its axis all the lenses can be brought in rapid succession in front of the eye, and the one giving emmetropic movements to the shadow soon found. The revolving of the disk can be done by the patient or by the surgeon himself, who can easily reach it by a step from his examination distance of one to one and a half-metres. Of course the disk can be made large enough to contain any number of lenses. But those I have used are, according to my experience, ample for all ordinary cases, and keep the size of the disk to easily manageable dimensions. When other and stronger lenses are required, a lens from the trial-case of a number higher than the highest in the disk can be

placed in the clip *I*, Fig. 2, which can be turned on the rod *B* to either side as desired, and the disk rotated as before, beginning at 0.25. The lens in the disk thus found is, of course, to be added to that in the clip, in order to have the full strength of the lens demanded. Not the least important use of the clip, however, is for holding the cylinder which has been selected for the correction of any existing astigmatism. This is very important, in many instances, for verifying the findings by other methods.

The graduated tape-measure *F* attached to the disk enables the observer to measure his exact distance from the eye under examination, which is necessary in the method as used by Jackson and others.

This apparatus, I claim, has the advantage over a somewhat similar disk devised by Doyne of Oxford, and exhibited at the International Medical Congress in Washington in 1887, in so far as it is less cumbersome, more easily manipulated, and is much less expensive. The disk can also be mounted on a stand, like a photographer's head-rest, which would allow of its being moved from place to place. Under certain circumstances this is the preferable form—for instance, where a special dark-room is not available. The instrument is made under both forms by Queen & Co., Philadelphia.